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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/774,725

02/09/2004

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05/04/2007

EXAMINER

DEPPE, BETSY LEE

ART UNIT

PAPER NUMBER

2611

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/774,725	Applicant(s) MOMTAZ, AFSHIN	
	Examiner Betsy L. Deppe	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-17, 20 and 21 is/are allowed.
- 6) ☒ Claim(s) 1-11, 18, 19 and 22-24 is/are rejected.
- 7) ☒ Claim(s) 25 and 26 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/3/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: clock 260 on page 11, line 24. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 1 is objected to because of the following informalities: the Examiner suggests changing "equalizer" on line 6 to "**decision feedback** equalizer" in order to be consistent with claim 1, line 2. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 1-11, 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. In claims 1 and 7, it is unclear what is meant by "generates an extracted clock signal having an adjustable phase offset from the equalized data" on lines 7-8 and 12-13, respectively. Is the adjustable phase offset relative to the equalized signal? Or is the equalized data used to generate the extracted clock signal wherein the extracted clock signal has an adjustable phase offset?
6. With regard to claims 3, 9 and 18, it is unclear is meant by "generates the extracted clock signal having an adjustable phase offset from the binary signal." Is the binary signal used to generate the extracted clock signal which has an adjustable phase offset? Or is the phase offset relative to the binary signal?
7. The dependent claims are rejected under the same grounds as the claims from which they depend.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita (US Patent No. 6,931,088 B1) in view of Nishimura et al. (US Patent No. 6,542,038 B2).

10. With regard to claim 22, Figure 1 of Tomita discloses the claimed invention including providing received data to a decision feedback equalizer (12), generating a binary signal, extracting a clock signal (CLK) from the binary signal, and retiming the binary signal (24) according to the clock signal (CLK). (See also column 1, line 13 - column 2, line 10) However, Tomita does not disclose generating a phase delay signal and extracting a clock according to the phase delay signal.

Figure 2 of Nishimura et al. discloses a phase lock loop, which generates a phase delay signal (6) and extracts a clock signal (via elements 1-4 and 7) according to the phase delay signal. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the phase lock loop of Nishimura et al. as the TR-PLL 16 in Tomita in order to use a well-known PLL and reduce any phase offset between the reference signal and the clock signal. Since Tomita does not disclose details of TR-PLL 16, it is also a matter of design choice what PLL is used based on design considerations of the system.

11. With regard to claim 23, Tomita in view of Nishimura et al. discloses a real time optimizer since phase-offset detecting phase comparator 6 in Nishimura et al. is changing the first delay control signal as the output of frequency divider 5 changes, i.e. in real-time.

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12. With regard to claim 24, Tomita in view of Nishimura et al. discloses delaying a signal from a voltage control oscillator to a phase detector. (See figure 2 of Nishimura et al.)

Allowable Subject Matter

13. Claims 1-11, 18 and 19 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

14. Claims 12-17, 20 and 21 are allowed.

15. Claims 25 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is an examiner's statement of reasons for allowance: prior art of record does not teach or suggests in combination a communications system comprised of the clock and data recovery circuit as recited in claim 12, lines 16-21 or a communications system comprised of the real time optimizer as recited in claim 15, lines 11-16.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rhee (US Patent No. 6,064,272) discloses a phase compensation circuit that reduces spurs. Fredriksson (US Patent No. 6,366,146 B2) teaches introducing virtual delays in a PLL when switching the reference clock.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betsy L. Deppe whose telephone number is (571) 272-3054. The examiner can normally be reached on Monday, Tuesday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'B. Deppe', with a stylized, cursive script.

Betsy L. Deppe
Primary Examiner
Art Unit 2611